WHAT IS CLAIMED IS:

1. A fuel cell system, comprising:

a fuel cell stack with single fuel cells stacked together in a fuel cell housing; and

a fire or temperature detection system.

2. A fuel cell system according to Claim 1, wherein said detection system comprises:

a monitoring system;

a sensor unit that detects fire or elevated temperatures inside said fuel cell housing, wherein said sensor unit is located inside the fuel cell housing or juxtaposed to the fuel cell stack; and

a voltage or current source.

3. A fuel cell system according to Claim 2, wherein said sensor unit comprises a device for detecting signals emitted by a heat source.

4. A fuel cell system according to Claim 2, wherein said detection system further comprises an impedance.

5. A fuel cell system according to Claim 4, wherein said impedance exhibits a negative or positive coefficient of resistance with temperature.

6. A fuel cell system according to Claim 5, wherein said impedance is at least one of a thermistor and a platinum resistance thermometer.

7. A fuel cell system according to Claim 2, wherein said detection system further comprises a loop-forming means and said sensor unit comprises a pair of electric conductors .

8. A fuel cell system according to Claim 7, wherein one end of said pair of conductors is connected to the electrical loop-forming means and the other end of said pair of conductors is connected to the voltage or current source.

9. A fuel cell system according to Claim 7, wherein said electric conductors are electrically insulated from one another at least partly by a meltable electrically-insulating material that melts at elevated temperatures.

10. A fuel cell system according to Claim 7, wherein said electrical loop-forming means is a resistor.

11. A fuel cell system according to Claim 7, wherein an end of said pair of electric conductors is connected to the monitoring system.

12. A fuel cell system according to Claim 9, wherein said pair of electric conductors is arranged such that, when said insulating material melts at any position, one electric conductor is moveable into electric contact with the other conductor.

13. A fuel cell system according to Claim 2, wherein said sensor unit comprises at least one device selected from the group consisting of a pyrometer, a thermograph, an infrared detector, an ultraviolet detector, a linear thermal detector that utilizes gas expansion, and combinations thereof.

14. A fuel cell system according to Claim 2, wherein said sensor unit comprises a quartz thermometer.

15. A fuel cell system according to Claim 2, wherein said sensor unit comprises a device that generates at least one of a temperature-sensing output voltage and a temperature sensing output current.

16. A fuel cell system according to Claim 2, wherein said sensor unit comprises a device selected from the group consisting of a thermocouple, a bimetallic snap disc, an IC temperature sensor, and combinations thereof.

17. A fuel cell system according to Claim 2, wherein said detection system further comprises a linear thermal detector that utilizes gas expansion.

18. A method for detecting fire or elevated temperatures in a fuel cell stack in a fuel cell housing, said method comprising:

generating an alarm signal via a sensor unit sensitive to at least one of elevated temperatures, light, or smoke in case of a fire or elevated temperatures inside said fuel cell housing, wherein said sensor unit is located inside the fuel cell housing; and

switching operation of the fuel cell stack to a secure state.

19. A method according to Claim 18, wherein a monitoring system indicates said fire or elevated temperatures if the sensor unit generates an alarm signal.

20. A method according to Claim 18, wherein said switching comprises disrupting or pausing a supply of a medium containing hydrogen to said fuel cell stack if said sensor unit generates an alarm signal.

21. A method according to Claim 18, wherein said switching comprises shutting down the fuel cell system if said sensor unit generates an alarm signal.

22. A method according to Claim 18, wherein an impedance of said sensor unit changes rapidly by at least one order of magnitude if the temperature inside the fuel cell housing rises above a temperature critical for fuel cell operation.

23. A method according to Claim 22, wherein the impedance of said sensor unit rises rapidly by at least one order of magnitude if the temperature inside the fuel cell housing rises above a temperature critical for fuel cell operation.

24. A method according to Claim 22, that the impedance of said sensor unit drops rapidly by at least one order of magnitude if the temperature inside the fuel cell housing rises above a temperature critical for fuel cell operation.

25. A method according to Claim 18, wherein a temperature rise inside the fuel cell housing above elevated temperatures which are critical for fuel cell operation causes melting of insulating material separating a pair of electric conductors from one another.

26. A method according to Claim 25, wherein upon melting of said insulating material, one or each of the electric conductors moves into electric contact with the other conductor and an alarm signal is generated.

27. A method according to Claim 26, wherein a short circuit is produced if one or each of the electric conductors moves into electric contact with the other conductor and an alarm signal is generated.